

SELECTION & SPECIFICATION DATA

Generic Type	Phenalkamine epoxy
Description	High performance epoxy that has excellent resistance to fresh and salt water exposures. This coating exhibits outstanding moisture and surface tolerance during application, low temperature cure capability, and very fast cure response for quick return to service. It contains an inert flake reinforcement (micaceous iron oxide) to enhance film strength and performance. This product is ideal for industrial or heavy duty marine environments for the protection of steel against salt laden environments.
Features	• High solids, low VOC • Low temperature cure • Excellent wetting properties • Excellent surface tolerance • Excellent moisture tolerance (application) • Continues to cure underwater • Fast cure response • Suitable for immersion service in fresh or salt water after 60 minutes cure @ 75°F
Color	Standard: 0200 (Tan) and 0700 (Grey) Colors 0500 (Red) and C900 (Black) are available on special request
Gloss	Semi-gloss
Primer	Self-priming
Dry Film Thickness	5 - 10 mils (127 - 254 microns) per coat
Solids Content	By Volume 80% +/- 2%
Theoretical Coverage Rate	1283 ft ² /gal at 1.0 mils (31.5 m ² /l at 25 microns) 257 ft ² /gal at 5.0 mils (6.3 m ² /l at 125 microns) 128 ft ² /gal at 10.0 mils (3.1 m ² /l at 250 microns) Allow for loss in mixing and application.
VOC Values	As Supplied : 1.44 lbs/gal (172 g/l) Thinner 2 : 16 oz/gal: 2.07 lbs/gal (248 g/l) These are nominal values and may vary with color.
HAPs Values	As supplied: 1.63 lbs/solid gal
Dry Temp. Resistance	Continuous: 200°F (93°C) Non-Continuous: 250°F (121°C)
Limitations	Epoxies lose gloss, discolor, and eventually chalk in sunlight exposure
Topcoats	Acrylics, Alkyds, Epoxies, Polyurethanes
Wet Temp. Resistance	Immersion temperature resistance depends upon the exposure. Contact Carboline for specific information.

SUBSTRATES & SURFACE PREPARATION

General	Surface must be clean. Employ adequate methods to remove dirt, dust, oil and all other contaminants that could interfere with adhesion of the coating in accordance with SSPC-SP 1 and follow the guidelines below.
Steel	<u>Immersion:</u> NACE No. 2/SSPC-SP 10 with a 2.0-3.0 mil (50-75 microns) surface profile. <u>Non-Immersion:</u> NACE No. 3/SSPC-SP 6 with a 2.0-3.0 mil (50-75 microns) surface profile for maximum protection. SSPC-SP 2, SSPC-SP 3, NACE No. 4/SSPC-SP 7, NACE/SSPC WJ-1 to WJ-4, or SSPC-SP 14 are also acceptable methods. For alternate methods contact Carboline Technical Service. When using under fireproofing products, defer to the primer surface preparation requirements in the product data sheet of the fireproofing product.
Concrete	Concrete shall be designed, placed, cured, and prepared in accordance with NACE No. 6/SSPC-SP 13, latest edition. Abrade to remove all laitance, loose concrete, etc. and to create surface profile in accordance with ICRI CSP standards for the coating system.
Non-Ferrous Metals	Surface profile should be a dense angular 1.5 - 3 mils and is best achieved through abrasive blasting in accordance with SSPC-SP16 for atmospheric exposure, or SSPC-SP17 for immersion environments.

MIXING & THINNING

Mixing	Mix separately, then combine and mix in the following proportions. 1 Gallon Kit = Part A: 0.8 Gallon; Part B: 0.2 Gallons 5 Gallon Kit = Part A: 4 Gallons; Part B: 1 Gallon
Thinning	Preferred Thinner Uses and Application: Thin up to 12% by volume with Carboline Thinner #2. Alternate Compatible Thinners for Atmospheric Service: Carboline Thinner 2, 10, 15, 76, 225E, 229, 236E, 243E, 248 and Plasite Thinner #19 or #20 Use of thinners other than those supplied by Carboline may adversely affect product performance and void product warranty, whether expressed or implied.
Ratio	4:1 (Part A to Part B)
Pot Life	1½ hours at 75°F (24°C) and less at higher temperatures. Pot life ends when coating becomes too viscous to use.

APPLICATION EQUIPMENT GUIDELINES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

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Spray Application (General)	Hold gun 12-14 inches from the surface and at a right angle to the surface.
Conventional Spray	Pressure pot equipped with dual regulators, 3/8" I.D. minimum material hose, .070" I.D. fluid tip and appropriate air cap.

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Airless Spray	Pump Ratio: 30:1 (min) Volume Output: 9.5 l/min min.(2.5gpm min.) Material Hose: 9.5mm min.(3/8" I.D. min.) Tip Size: 0.43-0.53mm (0.017-0.021") Output Pressure: 140-175kg/cm ² (2000-2500 psi) 1/2" minimum I.D. material hose recommended. May use 3/8" for some setups
	*PTFE packings are recommended and available from pump manufacturer.
Brush & Roller (General)	Not recommended for tank lining applications except when striping welds. For non-immersion applications over damp surfaces, brush and roller is the preferred method. Multiple coats may be required to obtain desired appearance, recommended dry film thickness and adequate hiding. Avoid excessive re-brushing or re-rolling. For best results, tie-in within 10 minutes at 75 °F (24 °C). Thin up to 11% by volume per gallon with Carboline 2. Use a short-nap synthetic roller cover with phenolic core

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	45°F (7°C)	20°F (-7°C)	20°F (-7°C)	0%
Maximum	90°F (32°C)	120°F (49°C)	100°F (38°C)	95%

Industry standards are for substrate temperatures to be above the dew point. For immersion conditions it is recommended to follow this procedure. For non-immersion conditions Carbomastic 615 can tolerate damp substrates. See Brush or Roller above. Special thinning and application techniques may be required above or below normal conditions. Do not apply to substrates with ice or ice crystal formation. Dehumidify or raise the temperature to eliminate ice on the substrate.

CURING SCHEDULE

Surface Temp.	Dry to Topcoat Minimum	Maximum Recoat Time	Minimum cure for immersion service
20°F (-7°C)	72 Hours	45 Days	7 Days
35°F (2°C)	2 Days	30 Days	5 Days
60°F (16°C)	8 Hours	15 Days	3 Hours
75°F (24°C)	2 Hours	7 Days	1 Hour
90°F (32°C)	90 Minutes	3 Days	1 Hour

These times above are based on a 5.0-10.0 mil (125-250 micron) dry film thickness per coat. Higher film thickness, insufficient ventilation or cooler temperatures will require longer cure times and could result in solvent entrapment and premature failure. Excessive humidity or condensation on the surface during curing can interfere with the cure, can cause discoloration and may result in a surface haze. Any haze or blush must be removed by water washing before recoating. Recoat intervals may vary from those listed above when using under intumescent fireproofing products. Consult Carboline Technical Service for recommended cure times before applying Carboline intumescent products. If the maximum recoat times have been exceeded, the surface must be abraded by sweep blasting or sanding prior to the application of additional coats. For force curing, contact Carboline Technical Service for specific requirements.

CLEANUP & SAFETY

Cleanup	Use Thinner #2 or Acetone. In case of spillage, absorb and dispose of in accordance with local applicable regulations.
Safety	Read and follow all caution statements on this product data sheet and on the SDS for this product. Employ normal workmanlike safety precautions.
Ventilation	When used as a tank lining or in enclosed areas, thorough air circulation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to insure all personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH approved supplied air respirator.
Caution	This product contains flammable solvents. Keep away from sparks and open flames.

PACKAGING, HANDLING & STORAGE

Shelf Life	Part A: 24 months @75°F(23°C) Part B: 24 months @75°F(23°C) Actual stated shelf life when kept at recommended storage conditions and in original unopened containers
Storage Temperature & Humidity	40-100°F(4°C-38°C) 0-95% Relative Humidity
Storage	Store Indoors. KEEP DRY
Shipping Weight (Approximate)	1 Gallon Kit: 15.8 lbs (7.2 kg) 5 Gallon Kit: 79 lbs (35.8 kg)
Flash Point (Setaflash)	Part A: 110°F(43°C) Part B: 90°F(32°C) Mixed: 103°F(39°C) Thinner 2: 23°F(-5°C)

WARRANTY

To the best of our knowledge the technical data contained herein is true and accurate on the date of publication and is subject to change without prior notice. User must contact Carboline to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. Carboline warrants our products to be free of manufacturing defects in accord with applicable Carboline quality control procedures. THIS WARRANTY IS NOT VALID WHEN THE PRODUCT IS NOT: (1) APPLIED IN ACCORDANCE WITH CARBOLINE'S SPECIFICATIONS, AND/OR (2) PROPERLY STORED, CURED, AND USED UNDER NORMAL OPERATING CONDITIONS. Carboline assumes no responsibility for coverage, performance, injuries, or damages resulting from use of the product. If this product is found not to perform as specified upon inspection by a Carboline representative during the warranty period, Carboline's sole obligation, if any, is to replace the Carboline product(s) proven to be defective or refund the purchase price thereof, at Carboline's sole option. Carboline shall not be liable for any other losses or damages. This warranty excludes (1) labor and costs of labor for the application or removal of any product, and (2) any incidental or consequential damages, whether based on breach of express or implied warranty, negligence, strict liability or any other legal theory. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARBOLINE, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. All of the trademarks referenced above are the property of Carboline International Corporation unless otherwise indicated. The whole text of this Product Data Sheet, as well as the documents derived from it, have been written in English, and for legal purposes the English version shall prevail.